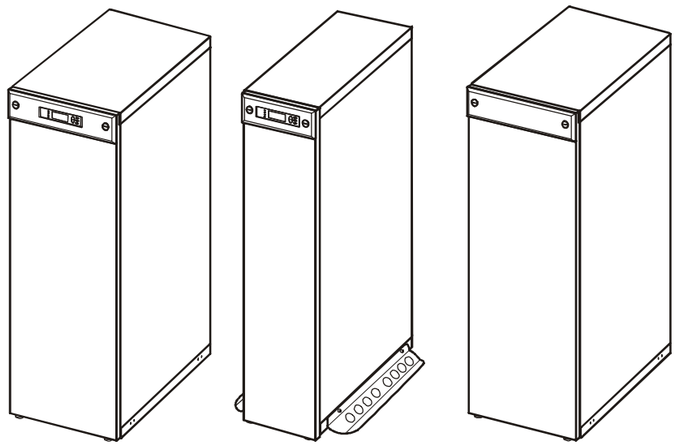
by Schneider Electric

Installation

MGE™ Galaxy™ 3500
10-40 kVA 380/400/415 V with batteries



UPS | UPS | XR battery enclosure

IMPORTANT SAFETY INSTRUCTIONS
SAVE THESE INSTRUCTIONS

Warning: ALL safety instructions in the Safety Sheet (990-2940) must be read, understood, and followed when installing the UPS system. Failure to do so could result in equipment damage, serious injury, or death.

Warning: After the UPS has been electrically wired, do not start it up. Start-up is commissioned to authorized personnel from Schneider Electric.

Caution: All electrical power and power control wiring must be installed by a qualified electrician, and must comply with local and national regulations for maximum power rating.

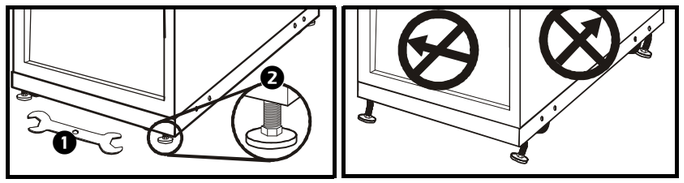
Note: Ensure that the unit is in its final location prior to installation.

Note: Battery and utility/mains power must not be connected until all other wiring has been completed.

See Also: For parallel configurations see manual 990-3568.

Level the Enclosure

Warning: The system must be installed on a level floor. The leveling feet will stabilize the enclosure, but will not account for a badly sloped floor.



❶ Use a 13/14 mm wrench to adjust the four leveling feet.

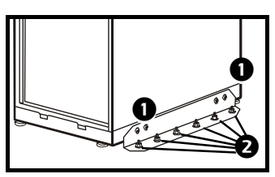
❷ Ensure that the system is level.

Caution: Do not move the enclosure after the leveling feet have been lowered.

Floor Anchoring (if applicable)

Anchor the UPS enclosure to the floor

Note: Floor-anchoring bolts are not provided with the UPS. Purchase the bolts locally (minimum size: M8). Follow the specifications given by the manufacturer of the floor anchoring system when bolting the UPS system to the floor.

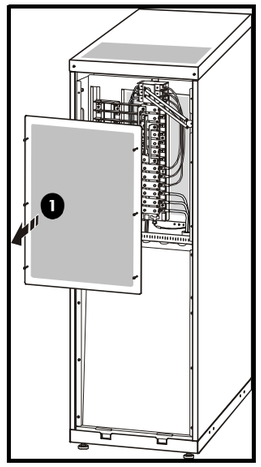


❶ Reuse the two transport brackets (one on each side) that were used to secure the UPS to the pallet during transport.

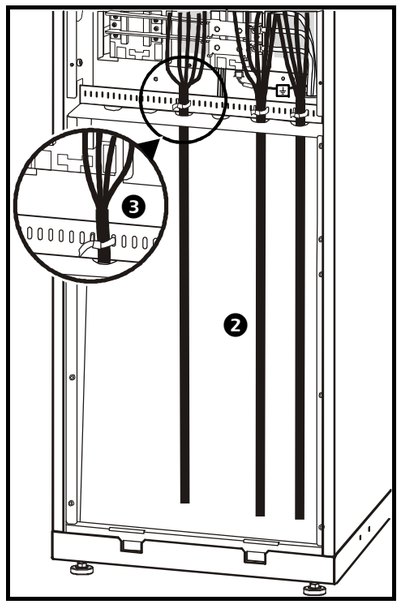
❷ Drill two to six holes in the floor for each bracket. Attach with bolts.

Prepare for Cables

Bottom cable entry



❶ From the rear of the UPS, loosen the six M4 screws from the upper cover (the cable landing area) on the back and remove.



❷Route the cables from the slanted back plate, up through the punched bracket, and into the cable landing area.

❸ Fasten the cables with cable ties

Note: A conduit box (part no. SUVTOPT001 or SUVTOPT002) is available as an option.

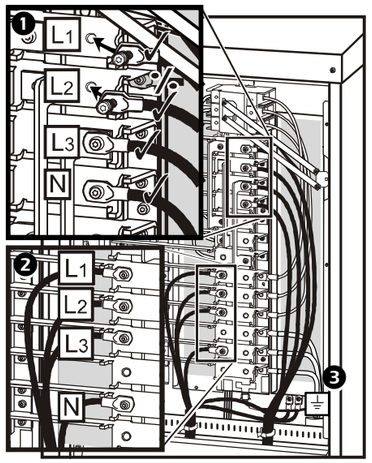
990-2258B-001 9/2009

Connect the AC Input and AC Output Cables

Warning: Use compression type lugs ONLY. Do not loosen or add cables to any factory preinstalled cables on busbars. Use the front part of busbar for connection only.

See Also: For different grounding configurations please see manual 990-3606.

Single mains

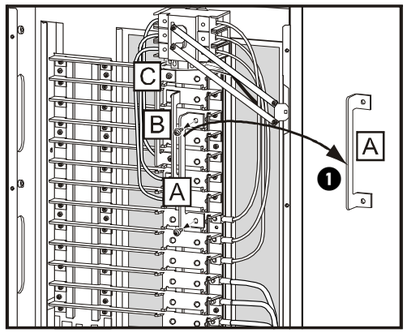


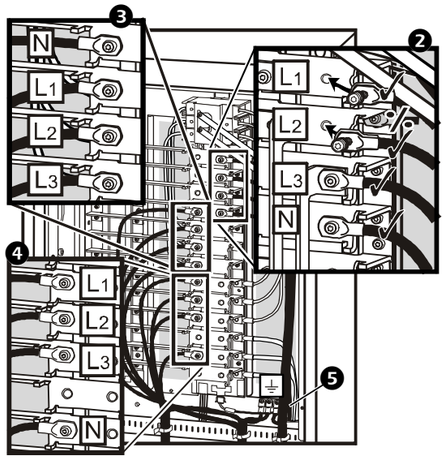
❶ Connect the AC input cables and the neutral to the input cable landings.

❷ Connect the AC output cables and the neutral to the output cable landings.

❸ Connect the ground cables to the studs (earth symbol beneath) using a screw.

Dual mains





❶ Remove the three busbars A, B, and C by removing two M6 screws from each busbar.

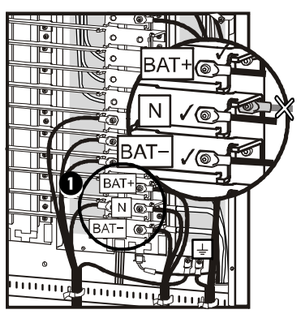
❷ Connect the AC input cables and the neutral to the input cable landings.

❸ Connect the bypass cables and the neutral to the bypass cable landings.

❹ Connect the output cables and the neutral to the output cable landings.

❺ Connect the ground cables to the studs (earth symbol beneath) using a screw.

Connect the DC Battery Cables (if applicable)



❶ Connect battery cables BAT+, BAT–, and N to the battery cable landings.

Connect the Communication Cables

Warning: Make sure that the UPS is completely OFF as the connectors are very close to the power busbars.

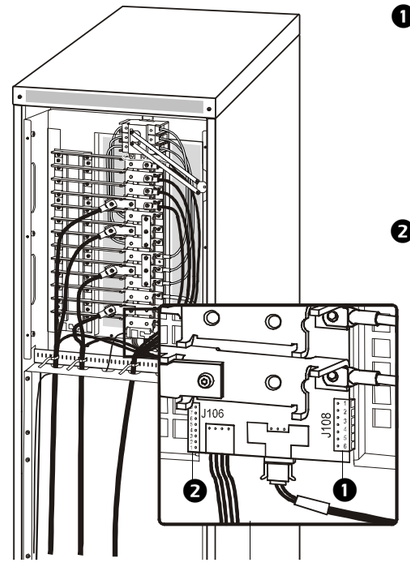
J106 (XR Battery Enclosure) and J108 (EPO)

Note: Use only 1-1½ mm² copper wire for the connection of the Emergency Power Off (EPO) and other optional equipment.

Note: The UPS must be connected to either a dry contact or a 24 VDC EPO (Emergency Power Off) switch.

Note: The external EPO +24 VDC, 1500 mA circuit can be supplied through other vendors.

Note: Always follow the pin connection procedures from the top and work down: J106 (8-1), J108 (1-6).



❶ **J108 pin connections:**

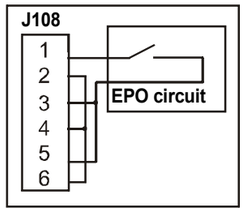
1 Normally open EPO
2 Normally open EPO return
3 Normally closed EPO
4 Normally closed EPO return
5 +24 V SELV supply
6 SELV ground

❷ **J106 pin connections:**

8 Ext. charging control return
7 External control of charging
6 Q3 active return
5 Q3 active
4 Battery measurement supply*
3 Battery unit quantity*
2 Max. battery temperature*
1 Battery measurement return*

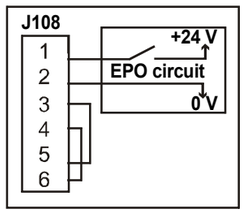
* Should be used with MGE Galaxy 3500 XR Enclosures

EPO wiring – pin connections J108. Connect the EPO cable using one of the following four wiring configurations.



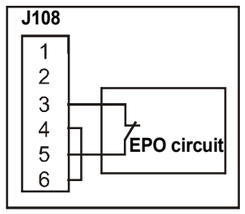
1: Dry Contacts Normally Open

EPO is activated when pin 1 is connected to pins 3 and 5.
Connections: 2-4-6, 3-5 and 1 (—/•—)



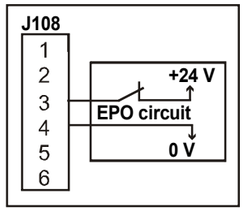
2: +24 V Normally Open

EPO is activated when an isolated SELV 24 VDC voltage is supplied on pin 1 with reference to pin 2.
Connections: 3-5 and 4-6.



3: Dry Contacts Normally Closed

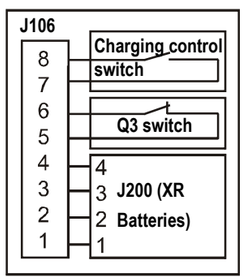
EPO is activated when a connection from pin 3 to pin 5 is opened.
Connections: 4-6.



4: +24 V Normally Closed

EPO is activated when a SELV 24 VDC voltage is removed from pin 3 with reference to pin 4.

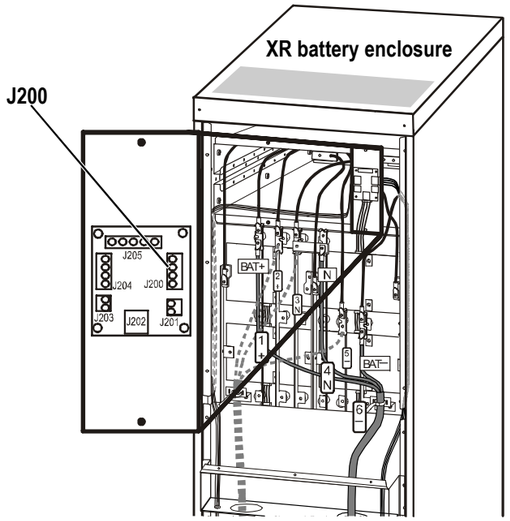
Pin connections J106 (UPS).



Pins 1 to 4 are for battery measurement (only applicable to MGE Galaxy 3500 XR Battery Enclosures (see J200 drawing).

Pins 5 and 6 are for external maintenance bypass Q3 (auxiliary switch N/C type).
When Q3 is closed, signals are fed back to the UPS controller (see Q3 drawing).

Pins 7 and 8 are for external charge control. When 7 and 8 are closed, the UPS charges batteries with a pre-defined percentage (0-25-50-75-100%) of the maximum charging power. To be used in generator applications, or if special codes require control of charging.
When Q3 is closed, signals are fed back to the UPS controller.



Note: When connecting the Q3 auxiliary signal, use gold-plated N/C auxiliary switch.

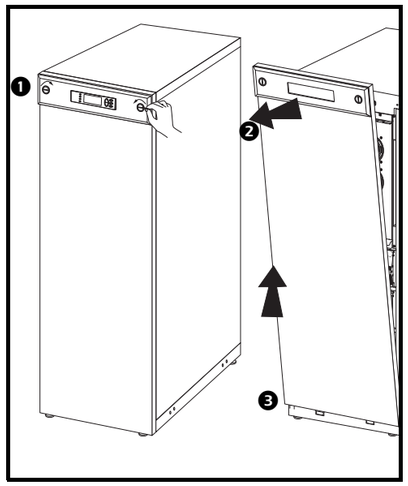
Note: Reinstall the cable landing cover.

Connect APC communication options

Note: The cable routing of the power chute software and the temperature sensor is identical.

Note: The temperature sensor is provided in a plastic bag attached to the front of the UPS behind the front panel.

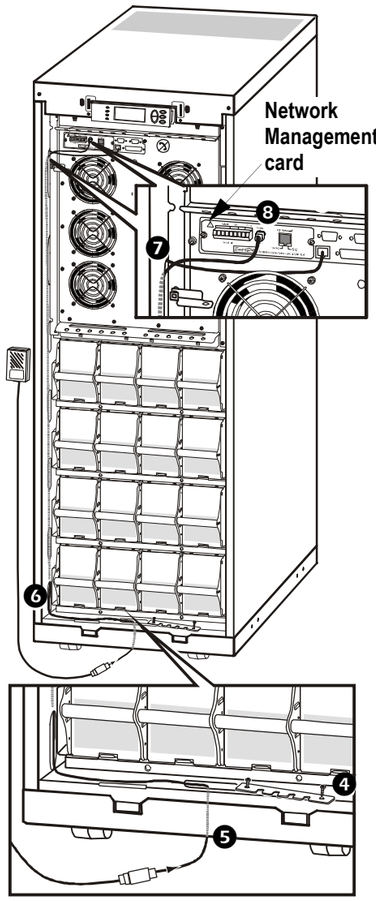
Front panel removal.



❶ Use a coin or similar to turn the two black lock devices on either side of the display in the direction of each other to a vertical positon.

❷ Push the front panel upwards and pull it outwards to disengage the locking device at the top of the enclosure.

❸ Lift the front panel free of the two slots at the bottom of the enclosure.



❹ Remove the two screws from the cable-inlet at the front and remove the cable-inlet plate.

❺ Guide the cable through the hole in the bottom plate and up through the cable-inlet.

❻ Guide the cable through the side panel hole and run the cable upwards inside the panel.

❼ Pull the cable out of the side panel through the hole closest to the Network Management Card area.

❽ Plug the cable into the probe socket / PowerChute inlet.

❾ Reattach the cable-inlet plate (❹).

Specifications

Warning: The UPS must be supplied from a 380/220 V, 400/230 V or 415/240 V L1, L2, L3, N, PE, 50 Hz.

AC input

	10 kVA		
UPS ratings	**380 V**	**400 V**	**415 V**
Input frequency (Hz)	40-70	40-70	40-70
Nominal input current (A)[1]	13.0	12.3	11.9
Max. input current (A)[2]	14.3	13.5	13.1
Input current limit (A)[3]	16.8	16.8	16.8

	15 kVA			20 kVA		
UPS ratings	**380 V**	**400 V**	**415 V**	**380 V**	**400 V**	**415 V**
Input frequency (Hz)	40-70	40-70	40-70	40-70	40-70	40-70
Nominal input current (A)[1]	19.4	18.5	17.8	26.0	24.7	23.8
Max. input current (A)[2]	21.4	20.3	19.6	28.6	27.2	26.2
Input current limit (A)[3]	25.2	25.2	25.2	33.8	33.8	33.8

	30 kVA			40 kVA		
UPS ratings	**380 V**	**400 V**	**415 V**	**380 V**	**400 V**	**415 V**
Input frequency (Hz)	40-70	40-70	40-70	40-70	40-70	40-70
Nominal input current (A)[1]	38.6	36.7	35.3	51.7	49.1	47.3
Max. input current (A)[2]	42.5	40.3	38.9	56.8	54.0	52.1
Input current limit (A)[3]	50.1	50.1	50.1	66.9	66.9	66.9

AC output

	10 kVA		
UPS ratings	**380 V**	**400 V**	**415 V**
Nominal output current (A)	15.2	14.4	13.9

	15 kVA			20 kVA		
UPS ratings	**380 V**	**400 V**	**415 V**	**380 V**	**400 V**	**415 V**
Nominal output current (A)	22.8	21.7	20.9	30.4	28.9	27.8

	30 kVA			40 kVA		
UPS ratings	**380 V**	**400 V**	**415 V**	**380 V**	**400 V**	**415 V**
Nominal output current (A)	45.6	43.3	41.7	60.8	57.7	55.6

Battery input

UPS ratings	**10 kVA**	**15 kVA**	**20 kVA**	**30 kVA**	**40 kVA**
Nominal voltage (V)	± 192	± 192	± 192	± 192	± 192
External battery fuse (A)	125	125	125	125	125
	1.6-1.75 V/cell (automatic, depending on load)				

Bypass input

UPS ratings	10 kVA 380 V	400 V	415 V
Input frequency (Hz)[4]	50±10 or 60±10	50±10 or 60±10	50±10 or 60±10
Nominal input current (A)[1]	15.2	14.4	13.9

UPS ratings	15 kVA 380 V	400 V	415 V	20 kVA 380 V	400 V	415 V
Input frequency (Hz)[4]	50±10 or 60±10	50±10 or 60±10	50±10 or 60±10	50±10 or 60±10	50±10 or 60±10	50±10 or 60±10
Nominal input current (A)[1]	22.8	21.7	20.9	30.4	28.9	27.8

UPS ratings	30 kVA 380 V	400 V	415 V	40 kVA 380 V	400 V	415 V
Input frequency (Hz)[4]	50±10 or 60±10	50±10 or 60±10	50±10 or 60±10	50±10 or 60±10	50±10 or 60±10	50±10 or 60±10
Nominal input current (A)[1]	45.6	43.3	41.7	60.8	57.7	55.6

Notes
[1] Input current based on rated load and batteries fully charged.
[2] Input current based on full battery recharge, nominal voltage and rated load.
[3] Current limitation through electronic current limiting is based on full battery recharge and low input voltage.
[4] Synchronization adjustable: ± 10Hz, ± 3Hz or ± 0.1Hz.

Recommended current protection

Note: AC input/output over-current protection and AC input/output disconnect must be provided by the customer

	Q1[1]	Q3	Q2
	Utility input	**Bypass input**	**Output**
10 kVA	16	16	16
15 kVA	25	25	25
20 kVA	35	35	35
30 kVA	50	50	50
40 kVA	63	63	63

[1] Required upstream current protection, mains input: gL type fuse.
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Recommended cable sizes

Note: The recommended cable sizes are based on an environment with an ambient temperature of 30°C.

	Mains input [mm²]	AC output [mm²]	Battery input [mm²] 75ºC Wire	Bypass input [mm²]
10 kVA	2.5	2.5	50	2.5
15 kVA	6	6	50	6
20 kVA	10	10	50	10
30 kVA	16	16	50	16
40 kVA	25	25	50	25

Note: Use Molex lug type or equivalent, and crimp to manufacturer's specifications.

Warning: At 100% switch mode load, the neutral must be rated for 200% phase current.

Minimum breaker settings

	800% overload bypass operation	150% overload normal/ battery operation	125% overload normal/ battery operation	Continuously
10 kVA				
Mains input	–[1]	–	–	16.4 A
Bypass input	121.5 A	–	–	16.7 A
Output	121.5 A	22.8 A	19 A	16.7 A
Duration	500 ms	60 s	10 min.	∞
15 kVA				
Mains input	–[1]	–	–	24.6 A
Bypass input	182 A	–	–	25.1 A
Output	182 A	34.2 A	25.4 A	25.1 A
Duration	500 ms	60 s	10 min.	∞
20 kVA				
Mains input	–[1]	–	–	32.5 A
Bypass input	244 A	–	–	33.4 A
Output	244 A	45.6 A	38 A	33.4 A
Duration	500 ms	60 s	10 min.	∞
30 kVA				
Mains input	–[1]	–	–	49.1 A
Bypass input	364 A	–	–	50.1 A
Output	364 A	68.4 A	57 A	50.1 A
Duration	500 ms	60 s	10 min.	∞
40 kVA				
Mains input	–[1]	–	–	65.6 A
Bypass input	487 A	–	–	66.9 A
Output	487 A	91.2 A	76 A	66.9 A
Duration	500 ms	60 s	10 min.	∞

[1] At single feed use the higher value of mains and bypass.

Recommended lug size and torque value

Note: Power terminal lug diameter: 6 mm. Torque value: 7 Nm.

Contact Information

For local, country-specific centers: go to www.apc.com/support/contact.

Appendix

Wiring diagrams

Diagram with Maintenance Bypass Panel

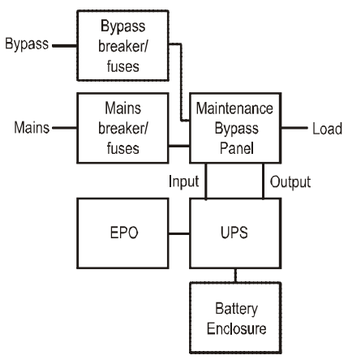

Diagram without Maintenance Bypass Panel